REMARKS

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1, 3, 4, 6, 7, 9, 10, 12-26 are pending in the application, with claims 1, 7, and 13 being the independent claims. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above Amendment and the following Remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Acknowledgement of Allowable Subject Matter

In the Action on page 13, section 10, the Examiner states that claims 21-23 are objected to and would be allowed if rewritten in independent form. Applicants thank the Examiner for the indication of allowable subject matter. Because these claims are dependent from an allowable claim as discussed below, Applicants wish to defer placing these claims in independent form at this time and respectfully request that these claims be allowed.

Rejections under 35 U.S.C. § 112

In the Action on page 3, section 4, claim 25 is rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in the specification and as failing to comply with the enablement requirement. It is respectfully submitted that the features of claim 25, as amended, are adequately described in the specification.

In amended claim 25, the recitation of "executing speech forward complementing when said wild card key-word is not present" is adequately described in the specification on page 13 line 19 to

page 14 line 22. Thus, it is respectfully submitted that the limitations of claim 25 are adequately described in the specification. Applicant respectfully requests that the rejection be rescinded and that the claim be allowed.

Rejections under 35 U.S.C. § 102

In the Action on page 4 section 7, claims 1, 3, 4, 6, 7, 9, 10, 12-18, 20, and 24-26 are rejected under 35 U.S.C. § 102(b) as being anticipated by Okuno et al. (hereinafter "Okuno"). Applicants respectfully traverse the rejection.

As per *amended* claim 1, Okuno does not teach at least one limitation of claim 1. Okuno does not teach means for repeatedly and continuously detecting whether or not there is a filled pause in a user's speech, wherein said filled pause is a trigger for complementing and ***wherein said filled pause is a lengthened vowel that is typically uttered during hesitation***. Specifically, claim 1 recites a speech complementing apparatus comprising: means for repeatedly and continuously detecting whether or not there is a filled pause in a user's speech, wherein said filled pause is a trigger for complementing and wherein said filled pause is a lengthened vowel that is typically uttered during hesitation; means for recognizing said user's speech in parallel with said detecting whether or not there is said filled pause; means for complementing a language part to the fragment of the language spoken by the user when said filled pause is detected by said means for detecting; and means for outputting a result of recognizing by said means for recognizing when no filled pause was detected.

The Office Action aligns the recited filled pause of claim 1 with the wildcard expression of Okuno. Okuno, however, does not teach a filled pause that is **a lengthened vowel that is typically uttered during hesitation**. Instead, Okuno teaches a wildcard expression which is either a

multiword substitution word or a rhythmic word. See Okuno p. 15, para. 42. Neither the multiword substitution word, nor the rhythmic word, is a lengthened vowel that is typically uttered during hesitation. Hence, Okuno fails to teach at least this limitation of claim 1.

Further, the filled pause may be a lengthened (e.g., intentionally prolonged) vowel that may typically be uttered during hesitation. The filled pause may be a typical hesitation phenomenon that usually indicates a user is having trouble thinking of or recalling a subsequent word. See e.g., the specification at page 4 line 25 - page 5 line 12. The filled pause is **not** a repetition of a pair of consonant and vowel as in Okuno. As known by those skilled in the art, the acoustic characteristics of the filled pause (e.g., "la-...l") are very different from a repetition of a consonant-plus-vowel pair (e.g., "lalalal").

During each filled pause, because the tension of the vocal cords and the vocal tract shape are stable (unvaried) under constant articulator parameters of a speaker, both the pitch (fundamental frequency) of the voice and the spectral envelope forming the formants remain almost constant (as shown, for example, in the Appendix Figure A-l). These features may be detected by using an audio signal processing technique (e.g., a filled pause detector), and the present invention may detect each filled pause by using such a detector, which can be executed in parallel with a speech recognition process. The input speech signal may be monitored by both the filled pause detector and the speech recognizer. Only when the filled pause is detected, the speech recognizer may be interrupted to make speech-complementing candidates. When the filled pause is not detected by the detector during normal speech input, the speech recognizer may not be interrupted, and its performance may not be degraded.

On the other hand during a repetition of a consonant-plus-vowel pair as taught in Okuno, the pitch and the spectral envelope do not remain constant and their characteristics are complex (as shown, for example, in the Appendix in Figure A-2). A repetition of a consonant-plus-vowel pair (e.g., the end part of "Honyalalal" or "Honyalalalalalalalalal" in Okuno) may not easily be detected by using an audio signal processing technique and, in fact, Okuno needs to use the speech recognizer (which is based on a complex statistical method) to detect the repetition. In this case, as described in Okuno, every possible wild-card expression must be added into a vocabulary dictionary. As widely known by those skilled in the art, the performance of the speech recognition is degraded when the number of entries in a vocabulary dictionary is increased. The greater the number of accepted wild-card expressions, the worse the performance of the recognizer. This contrasts with the present invention where the number of accepted expressions of the speech complementing is not related with the performance of the speech recognizer. In addition, Okuno has the limitation that wild-card expressions themselves cannot be entered as normal speech (text) input.

Therefore, Okuno uses a repetition of a consonant-plus-vowel pair in registered wild expressions and does not use the filled pause of amended claim 1.

Claims 3, 4, and 6 depend from claim 1 and are allowable as being dependent from an allowable claim.

As amended, claim 7 recites a similar limitation to the one discussed above with respect to claim 1. Claim 7 is allowable for at least the reasons given for claim 1.

Claims 9, 10, 12, 19, 20, and 24-26 depend from claim 7 and are allowable as being dependent from an allowable claim.

As amended, claim 13 recites a similar limitation to the one discussed above with respect to claims 1 and 7. Claim 13 is allowable for at least the reasons given for claims 1 and 7.

Claims 14-18 depend from claim 13 and are allowable as being dependent from an allowable claim.

Rejections under 35 U.S.C. § 103

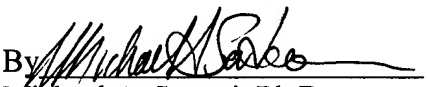
In the Action on page 12 in section 9, claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Okuno in view of U.S. Patent No. 5,884,259 to Bahl et al (hereinafter "Bahl"). Applicants respectfully traverse this rejection. Because claim 19 is dependent from claim 7, which are allowable over Okuno, claim 19 is allowable over the combination of Okuno in view of Bahl. Further, the teachings of Bahl do not overcome the deficiencies of Okuno. Bahl does not teach detection of a filled pause in speech. Instead, Bahl teaches a tree-structure for more efficient speech recognition. Thus, claim 19 is non-obvious and allowable over Okuno in view of Bahl.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Dated: October 12, 2004

Respectfully submitted,

By 

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